



STRENGTH  
SENSEI

- Here again is a powerpoint presentation

Charles left us that stands very well on its own to give you tips on your squat. This is not meant to be a comprehensive lesson, but rather a good refresher for experienced coaches, or a starting point for beginners to start analyzing it.

Enjoy!



STRENGTH  
SENSEI



# Coach Poliquin's 10 Best Gems for Squat Training

By Charles R. Poliquin



STRENGTH  
SENSEI

# Maximize your experience!

- Avoid distractions by turning off everything in your computer background that might distract you: e-mails, Skype, FB & other social medias.
- Turn off you cell phone, your office door etc.

*We have a great information packed hour to spend together, let's make the most out of it.*



STRENGTH  
SENSEI

# Who is Charles Poliquin?



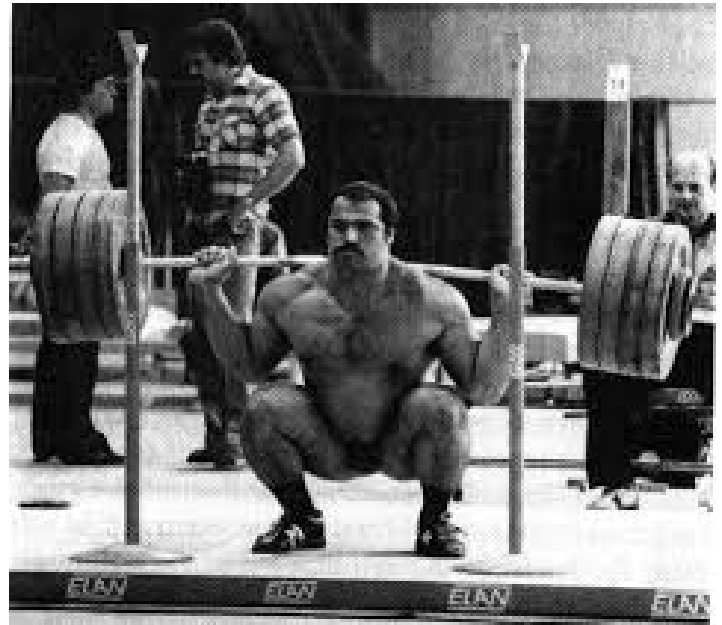
- 30+ years in the strength training business;
- Trained over 130 Olympic & World Championship medalists, in 20 different disciplines;
- Known worldwide for producing faster and stronger athletes;
- Dedicates his time to educate strength coaches so they can produce world class athletes



STRENGTH  
SENSEI

# Introduction

All squats are not equal !



力先生

STRENGTH  
SENSEI



力先生  
STRENGTH  
SENSEI



STRENGTH  
SENSEI

# Intro – Know Thyself

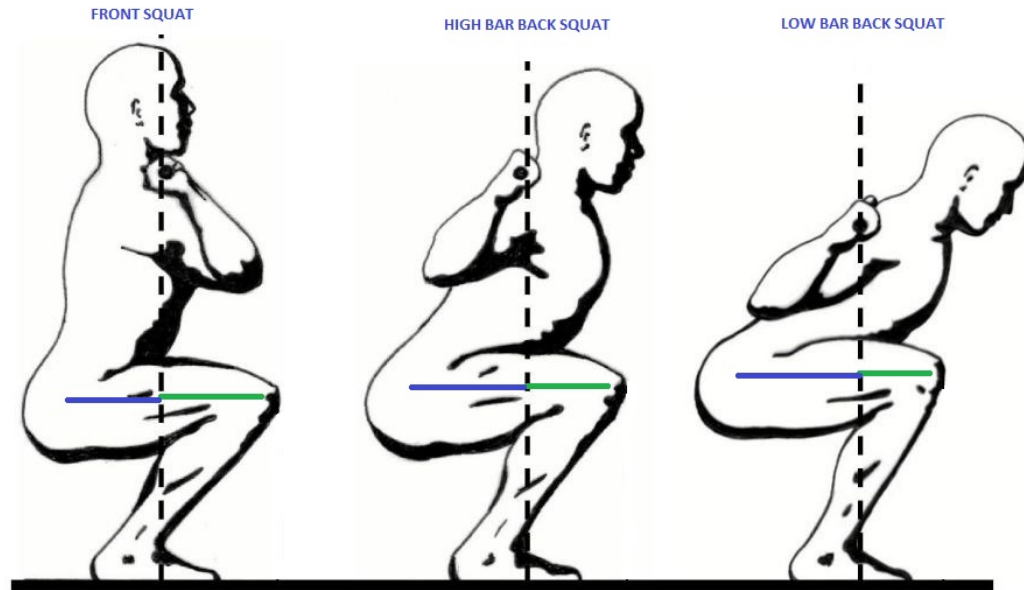
What type of squatter are you?

Everyone can squat

# Intro – Know Thyself

But not everyone should squat

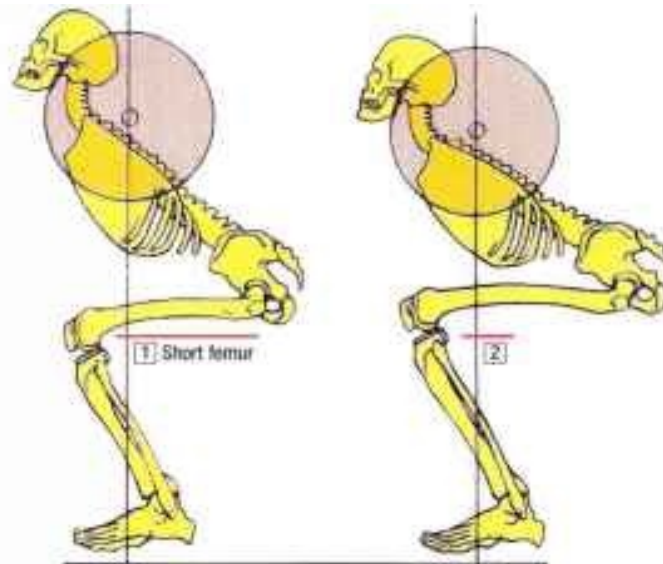
Body type and goals dictate bar placement





# Intro – Know Thyself

- Length of Torso vs. Length of Legs
- Length of Femur vs. Length of Tibia





Gem # 1 – Spend your time around 3 most types of squats

STRENGTH  
SENSEI

1. Front Squats
2. Olympic Back Squats
3. Powerlifter's Squat



# Gem # 1 – Spend your time around 3 most types of squats

## The Squat Continuum

STRENGTH  
SENSEI



**#1 Front Squat**



**#2 Back Squat**



**#3 Powerlifting Squat**





STRENGTH  
SENSEI

# Gem # 2 – Got Guts?

## Food Intolerance and

## Undetected Gut Issues Impede

## Squat Performance



STRENGTH  
SENSEI

# Gem # 2 – Got Guts?

## Why?





STRENGTH  
SENSEI

## Gem # 2 – Got Guts?

Inflammation in the gut inhibits  
core muscle contractions



STRENGTH  
SENSEI

# Gem # 2 – Got Guts?

## Inhibited Core Muscles

=

No Intra-Abdominal Pressure



No Upper body stiffness



STRENGTH  
SENSEI

# Gem # 3 – Get Over the Toes

To squat properly, the knees

**SHOULD** go over the toes





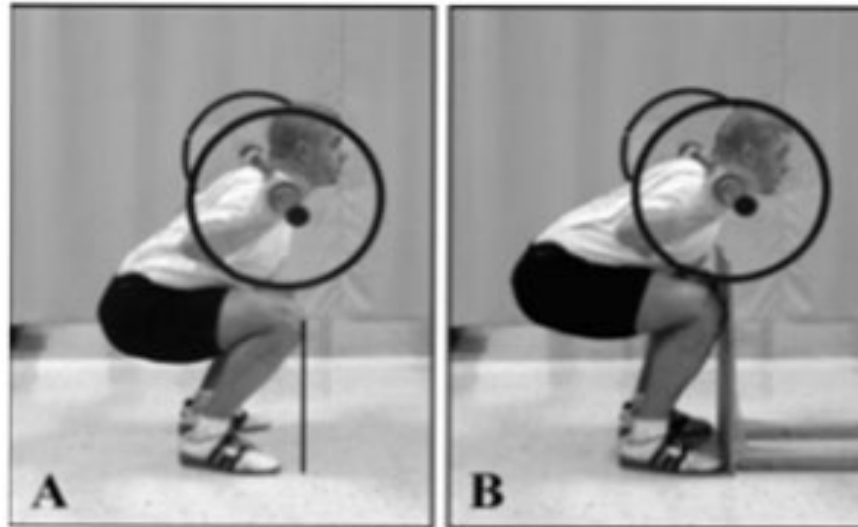
STRENGTH  
SENSEI

# Gem # 3 – Get Over the Toes



# Gem # 3 – Get Over the Toes

Unrestricted vs. Restricted Squat





# Gem # 3 – Get Over the Toes

The Results?

Knee torque vs. Hip torque

| Variable          | Unrestricted  | Restricted     |
|-------------------|---------------|----------------|
| Knee torque (N·m) | 150.1 ± 50.8  | 117.3 ± 34.2*  |
| Hip torque (N·m)  | 28.2 ± 65.0** | 302.7 ± 71.2** |



STRENGTH  
SENSEI

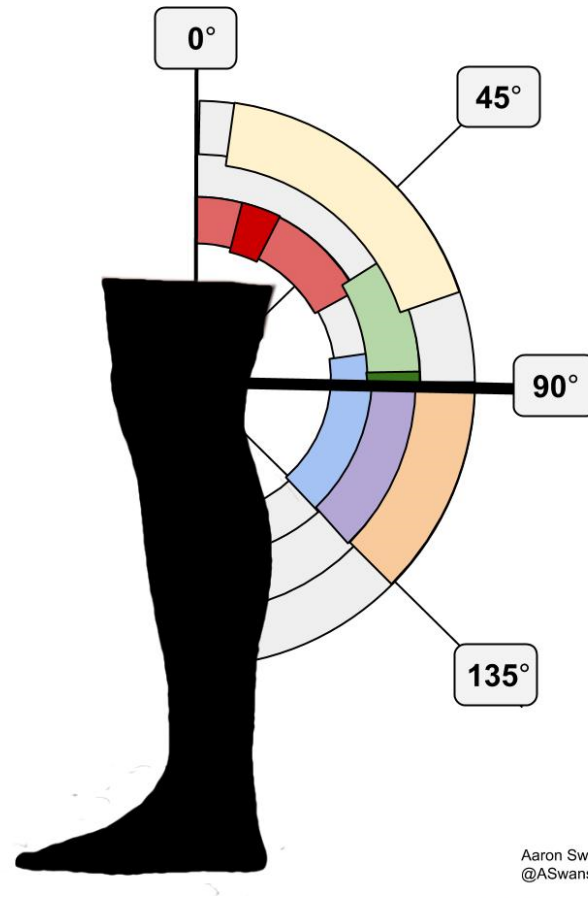
## Gem # 4 – Go Low or Go Home

When squatting in types 1 & 2,  
you should leave a stain on the  
floor

# Gem # 4 – Go Low or Go Home

## Degrees of Knee Flexion During the Deep Squat

- 0-60 = Maximum Anterior Shear Forces
- 15-30 = Peak ACL Shear Forces
- 10-70 = Maximum Hamstring EMG
- 80+ = Maximum Quadriceps EMG
- 50-90 = Maximum Posterior Shear Forces
- ~90 = Maximum PCL Shear Forces
- 90-130 = Maximum Compressive Forces
- 90+ = Maximum Glute EMG



Aaron Swanson  
@ASwansonPT



STRENGTH  
SENSEI

# Gem # 4 – Go Low or Go Home

## Shear Forces vs. Compressive Forces

Always pick compressive forces

 Because Gravity



STRENGTH  
SENSEI

# Gem # 5 – Get in Squat Condition!

Key muscles for stability and  
performance

ACL Protection



Eccentric Strength  
of the Hamstrings



# Gem # 5 – Get in Squat Condition!

STRENGTH  
SENSEI

Knee Valgus



VMO Strength

Meniscus



Eccentric Strength  
of the Quads





# Gem # 6 – Lower Back Training is the Best Plateau Buster

STRENGTH  
SENSEI

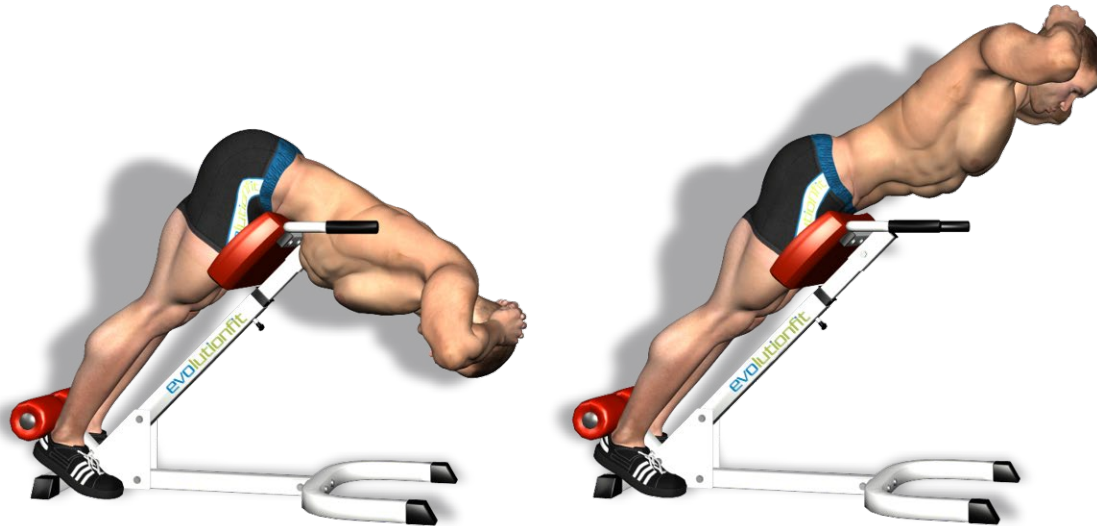


90° Back Extension



STRENGTH  
SENSEI

# Gem # 6 – Lower Back Training is the Best Plateau Buster



45° Back Extension



STRENGTH  
SENSEI

# Gem # 6 – Lower Back Training is the Best Plateau Buster



Back Extension



STRENGTH  
SENSEI

# Gem # 7 - Use the Proper Cues

## 1) Start by bending at the knee

- Closer to normal movement
- Best transfer to athletic performance



STRENGTH  
SENSEI

# Gem # 7 - Use the Proper Cues

## 1) Start by bending at the knee

- Starting with hips often results in going too far back

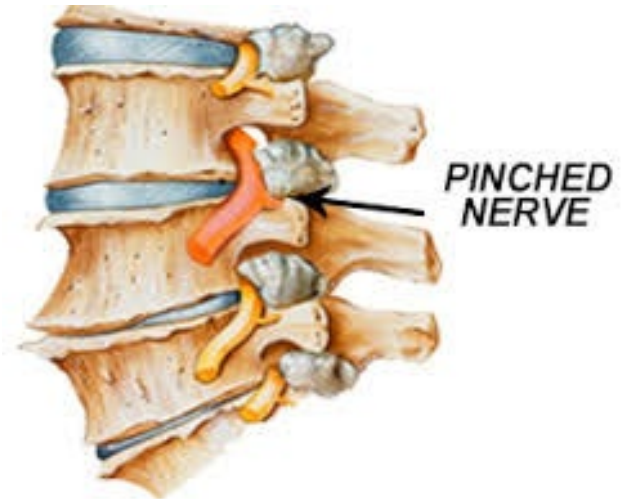
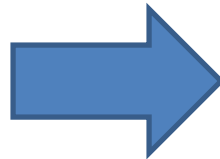


STRENGTH  
SENSEI

# Gem # 7 - Use the Proper Cues

## 2) Don't Look Up

- Extension of the neck restricts nerve impulse





STRENGTH  
SENSEI

# Gem # 7 - Use the Proper Cues

## 2) Don't Look Up

- Look at a fixed slightly above eye level.



STRENGTH  
SENSEI

# Gem # 7 - Use the Proper Cues

## 3) Upper Back Tight; Scapulas down and back

- Slide your shoulders blades in your back pockets





# Gem # 7 - Use the Proper Cues

BTW....

STRENGTH  
SENSEI

Biggest gym pet peeve:

over-cuing



STRENGTH  
SENSEI

# Gem # 7 - Use the Proper Cues

## Over-Cuing – Don't be that coach!





STRENGTH  
SENSEI

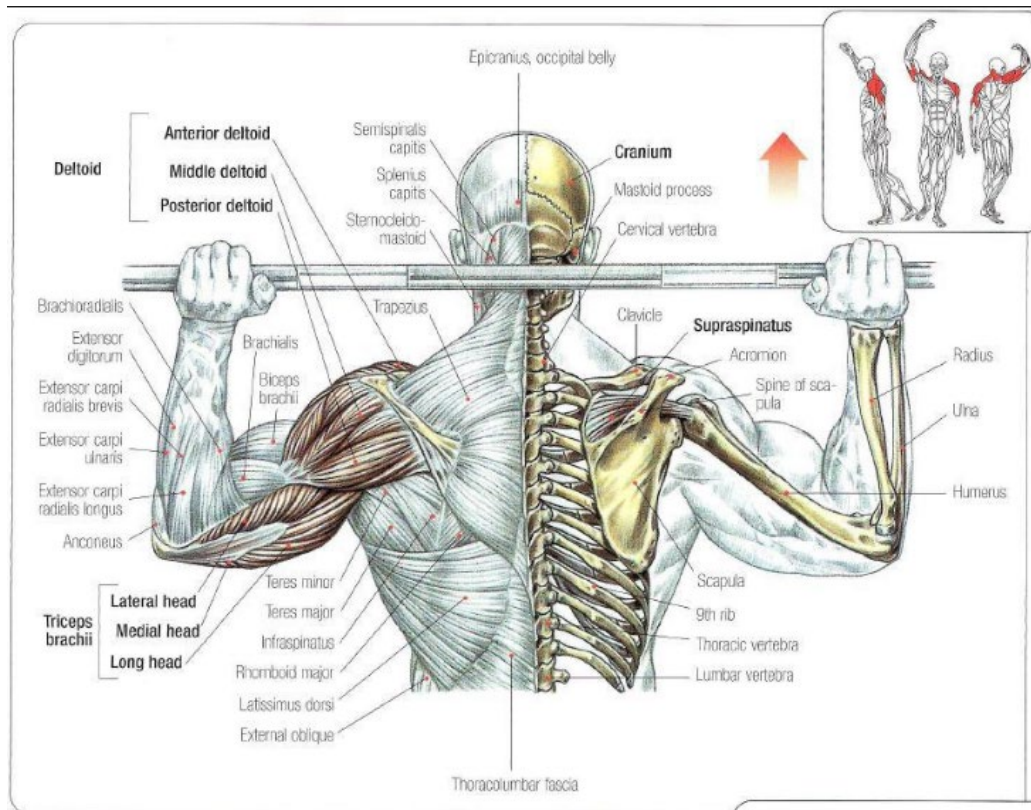
# Gem # 8 – Elbow Position Dictates Recruitment

- Relation to the bar
- Position in relation to traps



# Gem # 8 – Elbow Position Dictates Recruitment

- Recruit your back!



Exercise shown: Behind the neck Shoulder Press -



# Gem # 9 – Solve Upper Body Issue

Upper Body Issues that can impact your squat

1) Shoulder Issue 

Improper External Rotation prevents proper placement of elbows + discomfort with bar



STRENGTH  
SENSEI

# Gem # 9 – Solve Upper Body Issue

2) Upper Back stiffness → Prevents adequate arching of the back

3) Breathing Pattern + Core Muscle  
Issues

→ Prevents proper pressure of the intra-abdominal cavity





STRENGTH  
SENSEI

# Gem # 10 – Get Balanced!

Improper ratio of strength between muscles  
increases risk of injury





STRENGTH  
SENSEI

# Gem # 10 – Get Balanced!



Use predictor lifts to  
adequately assess

a client





STRENGTH  
SENSEI

# Gem # 10 – Get Balanced!

Example: Front Squat 1RM should be  
85% of Back Squat 1RM





STRENGTH  
SENSEI

# Gem # 10 – Get Balanced!

Proper strength ratios

between muscles also helps

increase performance



# Gem # 10 – Get Balanced!

**BUT!**

Caveat: Adequate ratio varies  
in function of sports

STRENGTH  
SENSEI



STRENGTH  
SENSEI

# Gem # 10 – Get Balanced!

## Overhead Squat

### Good overall Squat Assessment





STRENGTH  
SENSEI

# Bonus Gem – Squats for Mass

## Squat is the King of Exercise

Great at building legs but also the  
rest of the body



# Bonus Gem – Squats for Mass

## Squat vs. Leg Press

STRENGTH  
SENSEI

- Legs need time under tension to grow
- Issue: Doing long sets with squat



STRENGTH  
SENSEI

# Bonus Gem – Squats for Mass

## Want Whole Body Mass Gains?

- Give Breathing Squats a try!



STRENGTH  
SENSEI

# Bonus Gem – Squats for Mass

## Increasing Squat TUT

- 1 ½ Rep Method
- Isometric Hold during Concentric
- Isometric Hold during Eccentric
- Pause at the Bottom





STRENGTH  
SENSEI

# Bonus Gem – Assistance Lifts

## Increase your back Squat

## Performance Without Back

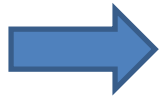
## Squatting



# Bonus Gem – Assistance Lifts

## Deadlifts

STRENGTH  
SENSEI



### Quad-dominant Forms

- Trap Bar Deadlift
- Clean-Grip Deadlift
- Hack Squat (aka Behind the back deadlift)



# Bonus Gem– Assistance Lifts

## Front Squat

STRENGTH  
SENSEI

Great Transfer to Back Squat

Better at targeting quadriceps



# Bonus Gem– Assistance Lifts

## Front Squat



Helps balance out

hamstrings strength



# Bonus Gem – Plateau-Busting Techniques

## Plateau busters

STRENGTH  
SENSEI

- - Pause at the bottom
- - High Frequency
- - Slow eccentrics
- - 20-reps breathing squats
- - Deadlift (Sheiko tip)
- - Front Squat
- - Accommodating resistance – chains/bands



# Bonus Gem – Proper Method

To Learn Proper Technique, Get Supervised

STRENGTH  
SENSEI

Book workouts with someone World  
class with 10,000 hours in the gym to  
correct your form



STRENGTH  
SENSEI

# All of this is great, but...

1. Nothing beats practice
2. You need to learn how to teach, use periodization and adequate technique on the Deadlift & Bench Press



STRENGTH  
SENSEI

# Any questions?

